

BAI Gang

Personal Info

Gender: Male

Date of Birth: 04/27/1985

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Technical Skills

- Experienced C++ programmer with thorough knowledge on OO and generic programming
- Good problem analysis and solving skill. Solid knowledge on computer science.
- Willing to learn various technical skills.
- Excellent communication/follow-up skills and time management skills.
- Programming language : C++; C; Python
- Dev techs: Graphics: OpenGL; GLSL.
Image/Vision: OpenCV; Intel IPP.
Parallel Computing: Nvidia CUDA; Intel TBB.
Numerical Computing: Intel MKL; GNU Scientific Library; Taucs; NAG.
- Project experience: Independent research; Large active codebase; Open source;
Library development; Application Development.
- Dev environments: Microsoft Visual Studio; GCC + MAKE.

Education

- Beijing University of Aeronautics and Astronautics. Sep, 2008 – Mar, 2011.
Degree: Master of Engineering Major: Computer science
Research area: Virtual Reality and Graphics
General ranking: 37 / 226
- Northeastern University. Aug, 2004 – July, 2008.
Degree: Bachelor of Engineering Major: Computer science
General ranking: 14 / 323

Work Experience

Company: Thomson/Technicolor Corporate Research (Beijing)

Time period: Dec, 2009 – Apr, 2010.

Title: Research Intern

Research Experience

1. **Project Name:** Image/Video Matting

Time period: Dec, 2009 – Apr, 2010.

Brief Description: An image-processing related project during my internship in Thomson/Technicolor Research Beijing.

Responsibility:

- Paper reading, analysis and implementation of matting algorithms under the guidance of my mentor.

- Implementing the Matting Lib and User Interface for the image matting tool.

Dev Techs: image processing, pattern recognition, numerical computation

2. **Project Name:** Smoke modeling from multiple cameras

Time period: Oct, 2009 – Oct, 2010.

Brief Description: My thesis project for a MS degree. The project is carried on with Dr. Tong from MSRA. We set up a multi-camera system and reconstruct the density volume for each frame of the captured smoke video.

Responsibility:

- Paper reading, data structure and algorithm design. Setting up the system.
- Implementing the modeling and rendering program.

Dev Techs: OpenGL/GLSL; Volumetric rendering; GPU parallel computing.

3. **Project Name:** Real-time marker detection and camera pose estimation

Time period: June, 2009 – Sep, 2009.

Brief Description: Detect the markers in each frame of the captured images and calculate a model-view matrix for the camera.

Responsibility:

- Implement the module: find corner of each marker in the given frame image
- Design and set the configure file to store the information of markers in the scene

Dev Techs: Image processing. Intel IPP, Intel MKL.

4. **Project Name:** Factorization and compact representation of SVBRDFs

Time period: Sep, 2008 – June, 2009.

Brief Description: Implementation of a Siggraph 2006 paper “Inverse shade tree”

Responsibility:

- Setting up the multi-camera multi-light capture system
- Write the matrix factorization program.

Dev Techs: OpenGL/GLSL; Matrix factorization; Numerical computation

5. **Project Name:** Spherical Harmonic Lighting

Time period: Mar, 2008 – Jun, 2008.

Brief Description: My thesis project for a bachelor degree. Implementation of a Siggraph 2002 paper, “Precomputed Radiance Transfer”.

Responsibility:

- Paper reading and implementing the spherical harmonic lighting program.

Dev Techs: OpenGL

Awards

2009 Guang-hua Scholarship.

2007 Hewlett-Packard Scholarship for China’s excellent students

2007 “Computer World” Magazine Scholarship

2007 Second prize in ACM Northeastern China Collegiate Programming Contest

2006 Second prize in China Undergraduate Mathematical Contest in Modeling

Publications

Gang Bai and Yue Qi. An Interactive 3D Exhibition System with Global Illumination for Digital Museum. In *Lecture Notes in Computer Science*, 2009, Volume 5670, Learning by Playing. Game-based Education System Design and Development, Pages 85-92.